

## CLAIMS

What is claimed is:

*Fig 3*

1. A system for collecting commodity consumption-related data from an endpoint device,  
5 said system comprising:

a data collection and processing device for receiving commodity consumption-  
related data;

a wide area network operable to receive commodity consumption-related data and  
to communicate received commodity consumption-related data to said data collection and  
10 processing device; and,

a local area network operable to communicate commodity consumption-related  
data to said wide area network, said local area network including a plurality of components and  
being adapted to utilize only uni-directional data communications between said components.

15 2. The system of Claim 1, wherein said plurality of components includes

a data concentrator for receiving commodity consumption-related data and for  
communicating received commodity consumption-related data to said wide area network, and

a repeater operable to communicate with said data concentrator using only uni-  
directional communications therebetween.

20 3. The system of Claim 2, wherein said plurality of components further includes an endpoint  
device for communicating commodity consumption-related data to said repeater, said endpoint  
device being operable to communicate with said repeater using only uni-directional  
communications therebetween.

25 4. The system of Claim 1, wherein said plurality of components includes

a data concentrator for receiving commodity consumption-related data and for  
communicating received commodity consumption-related data to said wide area network, and

30 an endpoint device for communicating commodity consumption-related data to  
said data concentrator, said endpoint device being operable to communicate with said data  
concentrator using only uni-directional communications therebetween.

5. The system of Claim 1, wherein said plurality of components includes  
a repeater having a transmitter operable to transmit commodity consumption-  
related data, and

an endpoint device having a transmitter operable to transmit commodity  
consumption-related data,  
wherein said transmitter of said repeater and said transmitter of said endpoint  
device are substantially similar.

6. The system of Claim 1, wherein said plurality of components includes  
a data concentrator having a receiver operable to receive commodity  
consumption-related data,

a repeater having a receiver operable to receive commodity consumption-related  
data, and

wherein said receiver of said data concentrator and said receiver of said repeater  
are substantially similar.

7. The system of Claim 1, wherein said plurality of components includes a repeater having a  
receiver operable to receive commodity consumption-related data, and wherein said receiver of  
said repeater includes a scanning receiver.

8. The system of Claim 1, wherein said plurality of components includes a plurality of  
endpoint devices operable to transmit commodity consumption-related data, and a repeater  
operable to receive commodity consumption-related data from said plurality of endpoint devices  
and to process received commodity consumption-related data in parallel.

9. The system of Claim 1, wherein said plurality of components includes a repeater having a  
receiver operable to receive commodity consumption-related data, and wherein said receiver of  
said repeater includes a digital multi-channel receiver.

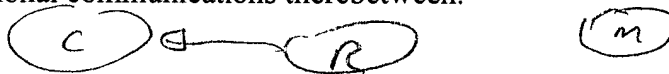
10. The system of Claim 1, wherein said plurality of components includes  
an endpoint device for transmitting a message including commodity consumption-  
related data in a particular format, and  
a repeater operable to receive the message from said endpoint device and for  
transmitting the message in the same format.

11. The system of Claim 1, wherein said plurality of components includes  
a plurality of endpoint devices for transmitting commodity consumption-related  
data, and

a repeater operable to receive commodity consumption-related data from said  
plurality of endpoint devices, for formulating a message including commodity consumption-  
related data received from at least two endpoint devices of said plurality of endpoint devices, and  
for transmitting said message.

12. A local area network of a network system for collecting commodity consumption-related  
data, said local area network comprising:

a data concentrator for receiving commodity consumption-related data;  
an endpoint device for communicating commodity consumption-related data; and,  
a repeater communicatively interposed between said data concentrator and said  
endpoint device, said repeater being operable to communicate with said data concentrator using  
only uni-directional communications therebetween, said repeater being operable to communicate  
with said repeater using only uni-directional communications therebetween.



13. The local area network of Claim 12, wherein said endpoint device includes a transmitter  
for transmitting commodity consumption-related data, wherein said repeater includes a  
transmitter for transmitting commodity consumption-related data, and wherein said transmitter of  
said endpoint device and said transmitter of said repeater are substantially similar.

14. The local area network of Claim 12, wherein said data concentrator includes a receiver  
for receiving commodity consumption-related data, wherein said repeater includes a receiver for

receiving commodity consumption-related data, and wherein said receiver of said data concentrator and said receiver of said repeater are substantially similar.

15. The local area network of Claim 12, wherein said endpoint device is operable to transmit commodity consumption-related data in a message having a particular format, and wherein said repeater is operable to receive the message from said endpoint device and to transmit the message in the same format.

16. The local area network of Claim 12, wherein said endpoint device is a first endpoint device and said local area network further comprises a second endpoint device, wherein said first endpoint device is operable to transmit commodity consumption-related data in a first message, wherein said second endpoint device is operable to transmit commodity consumption-related data in a second message, and wherein said repeater is operable to receive the first message and the second message, to formulate a third message including the commodity consumption-related data of the first message and the commodity consumption-related data of the second message, and to transmit the third message to said data concentrator.

17. The local area network of Claim 12, wherein said repeater includes a scanning receiver for receiving commodity consumption-related data.

18. The local area network of Claim 12, wherein said repeater includes a digital multi-channel receiver for receiving commodity consumption-related data.

19. The local area network of Claim 12, wherein said endpoint device is a first endpoint device and said local area network further comprises a second endpoint device for communicating commodity consumption-related data, and wherein said repeater is operable to receive commodity consumption-related data from said first and second endpoint devices and to process received commodity consumption-related data in parallel.

20. A method of collecting commodity consumption-related data through a communications network adapted for meter-reading, the method comprising the steps of:

receiving commodity consumption-related data at a repeater of a communications network adapted for meter-reading; and,

transmitting the received commodity consumption-related from the repeater to a data concentrator of the communications network through a uni-directional communication link  
5 between the repeater and the data concentrator.

21. The method of Claim 20, wherein the step of receiving includes receiving at the repeater commodity consumption-related data from an endpoint device through a uni-directional communication link between the repeater and the endpoint device.



22. The method of Claim 20, wherein the method further includes a step of transmitting the commodity consumption-related data from an endpoint device to the repeater with a transmitter associated with the endpoint device, wherein the step of transmitting the received commodity consumption-related data includes transmitting the received commodity consumption-related data with a transmitter of the data repeater, and wherein the transmitter associated with the endpoint device and the transmitter of the data repeater are substantially similar.

23. The method of Claim 20, wherein the step of receiving at the repeater includes receiving commodity consumption-related data with a receiver of the data repeater, wherein the method further comprises a step of receiving at a receiver of the data concentrator transmitted commodity consumption-related data from the data repeater, and wherein the receiver of the data repeater and the receiver of the data concentrator are substantially similar.

24. The method of Claim 20, wherein the step of receiving includes receiving commodity consumption-related data in a first format, and wherein the step of transmitting includes transmitting the received commodity consumption-related data in a second format.

25. The method of Claim 24, wherein the first format and the second format are the same.

26. The method of Claim 24, wherein the second format enables the transmitting in a single message of received commodity consumption-related data from a plurality of endpoint devices.